



# **Rocky Flats Environmental Technology Site**

## **TYPE 1 RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)**

**Buildings 569 and 570 Closure Project**

**REVISION 0**

**May 16, 2003**

**CLASSIFICATION REVIEW NOT REQUIRED PER  
EXEMPTION NUMBER CEX-005-02**

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**IA-A-001502**

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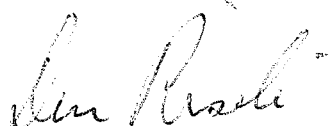
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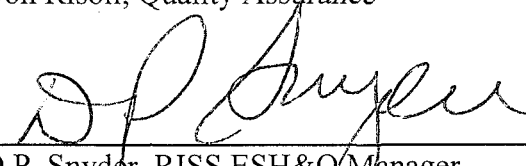
**May 16, 2003**

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- A Facility Location Map
- B Historical Site Assessment Report
- C Radiological Data Summaries and Survey Maps
- D Chemical Data Summaries and Sample Maps
- E Data Quality Assessment (DQA) Detail

## ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
DCGL <sub>EMC</sub>	Derived Concentration Guideline Level – elevated measurement comparison
DCGL <sub>W</sub>	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFEO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

## EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the DPP (10/8/98) and compliant disposition and waste management of Buildings 569 and 570. Because these facilities were anticipated Type 1 facilities, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) requirements. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., equipment, floor, walls, ceiling and roof). Environmental media beneath and surrounding the facilities were not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400. All laboratory results of building materials suspected of containing friable or non-friable asbestos in Building 569 were "None Detected." No building materials suspected of containing asbestos were identified in Building 570 during the visual and tactile inspection. All beryllium sample results from Buildings 569 and 570 were less than  $0.1 \mu\text{g}/100\text{cm}^2$ . Fluorescent light ballasts may contain PCBs. PCB ballasts and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. Demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. Concrete associated with Building 570 meets the criteria for concrete recycling criteria per the RFCA RSOP for Recycling Concrete. Concrete associated with Building 569 will not be used for concrete recycling.

Based upon this RLCR, Buildings 569 and 570 are considered Type 1 facilities and can be demolished or sold to offsite commerce. To ensure these facilities remain free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facilities posted accordingly.

## 1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable compliant disposition and waste management of Buildings 569 and 570. Because these facilities were anticipated Type 1 facilities, a PDS characterization was performed. All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities (i.e., equipment, floor, walls, ceiling and roof). Environmental media beneath and surrounding the facilities were not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed, among these are Buildings 569 and 570. The location of these facilities is shown in Attachment A, *Facility Location Map*. These facilities no longer support the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before these facilities can be removed, a Pre-Demolition Survey (PDS) must be conducted; this document presents the PDS results. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report (HSAR).

### 1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. An RLC is performed before Type 1 building demolition to define the pre-demolition radiological and chemical conditions of a facility. Pre-demolition conditions are compared with the unrestricted release limits for radiological and non-radiological contaminants. RLC results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

### 1.2 Scope

This report presents the pre-demolition radiological and chemical conditions for Buildings 569 and 570. Environmental media beneath and surrounding the facilities were not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

### 1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP.) Refer to section 2.0 of MAN-127-PDSP for these DQOs.

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## 2 HISTORICAL SITE ASSESSMENT

A Facility-specific Historical Site Assessment (HSA) was conducted to understand the facility histories and related hazards. The assessment consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). Results were used to identify data gaps and needs, and to develop radiological and chemical characterization plans. Results of the facility-specific HSA were documented in a facility-specific *Historical Site Assessment Report (HSAR) for Area 4 - Group 2 Facilities*, dated July 2002, Revision 0 (refer to Attachment B, *Historical Site Assessment Report*). In summary, the HSAR identified minimal potential for radiological or chemical hazards.

## 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Buildings 569 and 570 were characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describe the minimum survey requirements (refer to the RISS Characterization Project files).

Two radiological survey packages were developed for the interior of Buildings 569 and 570, including fixed equipment: 569-4-003 (Building 569) and 570-4-004 (Building 570 interior). The survey packages were developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total surface activity (TSA), removable surface activity (RSA), media samples, and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures*. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit packages are maintained in the RISS Characterization Project files.

Ninety-six (96) TSA measurements (30 random, 25 biased, 35 equipment and 6 QC) and ninety (90) RSA measurements (30 random, 25 biased, and 35 equipment) were performed; and a minimum 5% of facility interior and exterior surfaces were scanned, including a 25% scan of the interior floor surfaces in Building 569. The RLC data confirmed that the facilities do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. The radiological survey unit packages are maintained in the RISS Characterization Project files. Level 2 Isolation Control postings are displayed on the buildings to ensure no radioactive materials are inadvertently introduced.

The exterior radiological surveys for Buildings 569 and 570 were performed as part of the RISS West Side Exterior PDS strategy effort (authorized by Department of Energy letter, 02-DOE-01598, dated December 13<sup>th</sup>, 2002 and approved by CDPHE letter, *RE: Proposed Deviations From The Pre-Demolition Survey Plan (PDSP)*, dated January 27, 2003; refer to the RISS Characterization Project Files for letter copies). The RISS West Side exterior building radiological surveys and locations can be found in survey unit package EXT-B-001, *RISS West Side Building Exteriors*. Eight (8) biased TSA measurements, eight (8) biased RSA measurements, and a one (1) square meter scan at each of the eight TSA/RSA locations were performed at biased locations on the exterior surfaces of Buildings 569 and 570. In addition, 10 percent scan surveys were performed on the concrete surfaces associated with Buildings 569 and 570. The RLC data collected in exterior survey unit package EXT-B-001 confirmed that the exterior surfaces of Buildings 569 and 570 do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey map locations for the West-Side Exterior survey unit package EXT-B-001 are maintained in the RISS Characterization Project files.

#### **4 CHEMICAL CHARACTERIZATION AND HAZARDS**

Buildings 569 and 570 were characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on, or in these facilities. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describes sampling requirements, the justification for the sample locations and estimated number of samples. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, lead and PCBs. Refer to Attachment D, *Chemical Data Summaries and Sample Maps*, for details on sample results and sample locations.

##### **4.1 Asbestos**

A survey of building materials suspected of containing asbestos was conducted in the aforementioned buildings in accordance with the RLCP. A CDPHE-certified asbestos inspector conducted the inspection and sampling in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1*. Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

A comprehensive, invasive asbestos inspection was conducted in Building 569 to determine the presence of friable and non-friable asbestos containing building materials. All laboratory results of building materials suspected of containing friable or non-friable asbestos in Building 569 were "None Detected." No building materials suspected of containing asbestos were identified in Building 570 during the visual and tactile inspection, therefore, asbestos sampling was not performed in this building as part of the RLC effort.

Asbestos laboratory analysis data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

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## 4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, Buildings 569 and 570 were anticipated Type 1 facilities. There was not, however, adequate historical and process knowledge to conclude that beryllium was not used or stored in these buildings. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999*. Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium surface smear sample results for Buildings 569 and 570 were less than 0.1  $\mu\text{g}/100\text{cm}^2$ . Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

## 4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on the HSAR, facility walk-downs and a review of RFETS waste management databases, Building 569 functions as a permitted RCRA unit for storage of LLM waste streams. This unit will be closed in accordance with the RCRA Part B closure procedures. The closure process will address any RCRA/CERCLA contamination identified in the facility at this time. Building 570 was never operational and does not have any indication of contamination. Based on the above rationale, RCRA/CERCLA sampling was not performed as part of the RLC process.

Sampling for lead in paint in these facilities was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

These facilities may contain RCRA regulated materials such as mercury switches and fluorescent lamps. A thorough inspection of the facility will be made, and all regulated materials will be removed prior to demolition.

## 4.4 Polychlorinated Biphenyls (PCBs)

Based on a review of the HSAR and facility walk-downs, there is no evidence of PCB contamination in these facilities. Based on the age of the buildings (constructed after 1980), paints used do not contain PCBs.

Although unlikely, these facilities may contain fluorescent light ballasts containing PCBs. Fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non PCB-containing), manufacturer, and date of manufacturing. All ballasts that do not indicate non PCB-containing are assumed to be PCB-containing. Leaking PCB ballasts, and those that weigh more than 9 pounds, will be removed prior to demolition and managed in accordance with Colorado hazardous waste regulations. If non-leaking PCB ballasts are discovered, and left in the facility, the debris will be considered PCB Bulk Product Waste.

## 5 PHYSICAL HAZARDS

Physical hazards associated with Buildings 569 and 570 are those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. The buildings have been relatively well maintained and are in good physical condition, therefore, does not present hazards associated with building deterioration. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practice.

## 6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Buildings 569 and 570 and consequent waste management are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- ◆ the *number* of samples and surveys;
- ◆ the *types* of samples and surveys;
- ◆ the sampling/survey process as implemented “in the field”; and,
- ◆ the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

## 7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of Buildings 569 and 570 will generate a variety of wastes. Estimated waste types and waste volumes are presented below. All waste can be disposed of as sanitary waste, except PCB Bulk Product Waste. There is no radioactive or hazardous waste. PCB ballasts will be managed pursuant to Site PCB abatement and waste management procedures. Concrete associated with Building 570 meets the criteria for concrete recycling criteria per the RFCA RSOP for Recycling Concrete. Concrete associated with Building 569 will not be used for concrete recycling.

Waste Volume Estimates and Material Types							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste
569	4,000	0	1,100	2,000	1,000	0	None
570	3,900	0	700	200	0	0	None

## 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Buildings 569 and 570 are classified as RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and can be demolished or sold to offsite commerce. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data.

The RLC of Buildings 569 and 570 was performed in accordance with the DDCP and PDSP. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. This facility does not contain radiological or hazardous wastes. PCB ballasts will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations. Demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal*, as applicable. Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA. Concrete associated with Building 570 meets the criteria for concrete recycling criteria per the RFCA RSOP for Recycling Concrete. Concrete associated with Building 569 will not be used for concrete recycling.

To ensure these Type 1 facilities remains free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established and the facilities posted accordingly.

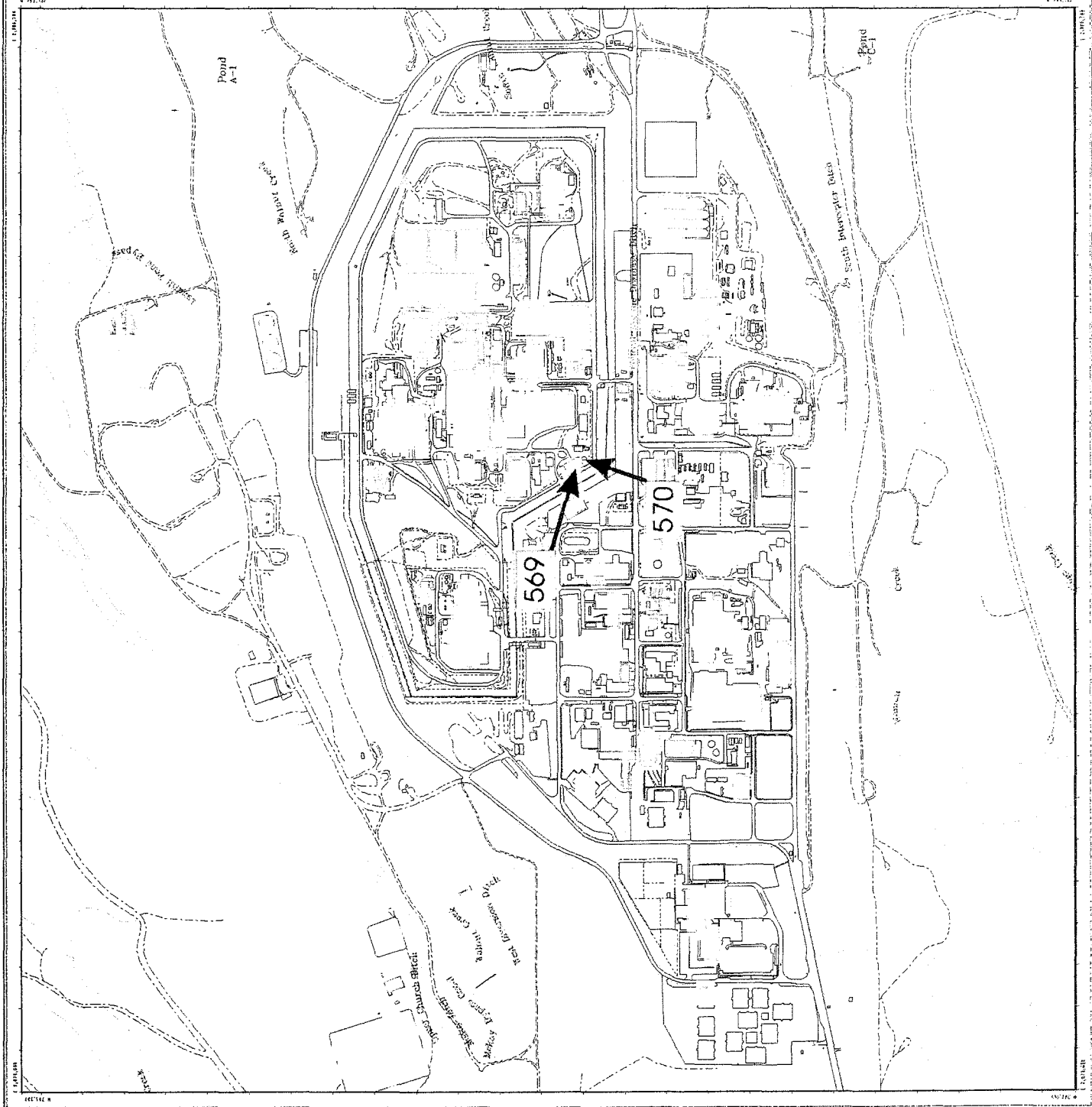
## 9 REFERENCES

- DOE/RFFO, CDPHE, EPA, 1996. Rocky Flats Clean-up Agreement (RFCA), July 19, 1996.
- DOE Order 5400.5, "Radiation Protection of the Public and the Environment."
- EPA, 1994. "The Data Quality Objective Process," EPA QA/G-4.
- K-H, 1999. Decommissioning Program Plan, June 21, 1999.
- MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program*, Rev. 1, November 1, 2001.
- MAN-076-FDPM, *Facility Disposition Program Manual*, Rev. 3, January 1, 2002.
- MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol*, Rev. 3, July 15, 2002.
- MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities*, Rev. 1, July 15, 2002.
- MARSSIM - Multi-Agency Radiation Survey and Site Investigation Manual, December 1997 (NUREG-1575, EPA 402-R-97-016).
- PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure*, Rev. 1, May 22, 2001.
- PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures*, Rev. 1, May 22, 2001.
- PRO-477-RSP-16.03, *Radiological Samples of Building Media*, Rev. 1, May 22, 2001.
- PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey*, Rev. 1, May 22, 2001.
- PRO-563-ACPR, Asbestos Characterization Procedure, Revision 0, August 24, 1999.
- PRO-536-BCPR, Beryllium Characterization Procedure, Revision 0, August 24, 1999.
- RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition.
- RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.
- RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999.
- Historical Site Assessment Report (HSAR) for the Area 4 - Group 2 Facilities*, Dated July 2002, Revision 0.

# ATTACHMENT A

## Facility Location Map

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# Buildings 569 & 570

## Standard Map Features



Buildings and other structures



Demolished buildings and other structures

Lakes and ponds

Streams, ditches, or other drainage features

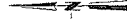
Fences and other barriers

Paved roads

Dirt roads

### DATA SOURCE BASE FEATURES:

Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs, 1995



Scale = 1 : 2450  
1 inch represents approximately 1038 feet

250 500 750  
Feet  
State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by:

2-24-2002/HLL

Prepared for:

2-24-2002/HLL

ES Dept. 302-966-7707



MAP ID: FY 2002

February 26, 2003

## ATTACHMENT B

# Historical Site Assessment Report

**D&D RISS Facility Characterization  
Historical Site Assessment Report  
July, 2002 Rev. 0**

**Facility ID: (Area 4 – Group 2) - Buildings 556, 566A, 569, 570, T760A, 790, and 906.**

Anticipated Facility Type (1, 2, or 3): Buildings 556, 566A are anticipated Type 2 facilities. Buildings 569, 570, T760A, 790 and 906 are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:  
*D&D Characterization Protocol*, RFETS MAN-077-DDCP, latest version, and  
*Facility Disposition Program Manual*, RFETS MAN-076-FDPM, latest version

**Physical Description**

**Building 566 and 566A**

Building 566 and 566A are a single structure divided in to a 13,700 sq. ft. Site Alarm Maintenance and Respirator Repair Facility and the 4000 sq. ft. filter plenum designated Buildings 566 and 566A. Building 566A is basically the administrative portion of the 566 building. Both facilities were constructed in the 1991. The walls are reinforces concrete, the roof is constructed with a metal sheet, lightweight concrete, insulation and a synthetic membrane to seal the roof. The floor is pored concrete.

Building 566 and 566A have the following utilities: electric, plant water, plant sanitary, process waste line (lock and tagged-out) and an overhead sprinkler system and wall-mounted fire extinguishers provide fire protection.

**Building 569**

Building 569, also known as the Crate Counting Facility, is a 7620 sq. ft. single-story building constructed in 1987. Building 569 is a prefabricated modular building constructed on a concrete slab. The walls are constructed of metal siding mounted on a steel frame. The roof is an insulated metal roof mounted to a steel frame.

Building 569 has the following utilities; electric, plant water, plant sanitary, plant steam and fire protection is provided by wall-mounted fire extinguishers.

**Building 570**

Building 570 is the filter plenum for the Crate Counting Facility and is a 683 sq. ft. building constructed in 1987. Building 570 is a concrete building with 12-in thick reinforced concrete walls and a concrete floor. The roof is constructed with insulated sheet metal supported by steel joists.

Building 570 has the following utilities; electric, plant water, plant steam, and a plenum deluge system and wall-mounted fire extinguishers provide fire protection.



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**Trailer T760A**

Trailer T760A is a 500 square foot shower trailer. This trailer was placed into service in 1990 and is located south of the 750 Pad. T760A has aluminum siding and aluminum skirting. Each entry has wooden steps leading to the entry doors. The interior is configured with a separate men and woman's shower, toilet and locker room facility. The interior walls are wallboard and the floors are vinyl tiles. There is a propane gas tank located west of the trailer.

Trailer T760A has the following utilities: electric, propane gas, plant water, plant sanitary, and fire protection is provided by wall mounted fire extinguishers. The water and gas systems have been shut off.

**Building 790**

Building 790 is a 6,768-sq. ft. single-story concrete building constructed in 1991. The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area. The irradiation cells and control room are constructed of 2-feet-thick concrete walls. The instrument calibration support and office areas are constructed of masonry blocks and steel reinforcement. The floors are poured in place concrete. The roof is constructed with insulated sheet metal supported by steel joists.

Building 790 has the following utilities; electric, plant water, plant sanitary, natural gas, and fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

**Building 906**

Building 906 is a 25,000 square foot TRU waste storage facility. Building 906 was constructed in 1994 as a LLW storage facility. In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-grades to comply with the TRU waste storage requirements. Building 906 is a steel frame building constructed on a concrete pad. The walls and roof are insulated aluminum mounted on the steel frame.

Building 906 has the following utilities; electric, fire protection is provided by an overhead sprinkler system and wall mounted fire extinguishers.

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**Historical Operations**

**Building 566 and 566A**

Buildings 556 and 566A were originally constructed to be the site laundry facility. Laundry operations only lasted for about 2 years, and the facility was never approved to handle the highly contaminated laundry. Building 566 has always housed Respirator Cleaning and Repair operations. In 1999, the Alarms Maintenance Servicing Center moved into the 566 building.

Alarm maintenance involves cleaning equipment, replaces faulty components, and testing and inspecting equipment. The Respirator Cleaning and Repairs Facility contains a respirator washer, laundry carts, radioactivity monitoring equipment detergent, bleach and water are used in the respirator washing process. Wastewater drains into two storage tanks located in the Building 566 pit and is then pumped to the sanitary drain. Building 566 has a process waste line which had been locked-out. Respirators and Alarm equipment are surveyed for radioactivity prior to being transported to Building 566.

In the late 1990s, the B566 ventilation air filter plenum was surveyed and no radiological contamination was found. The radiological posting were removed from the plenum. In the late 1990s, the washers and dryers were removed and the waste trench under the washers was surveyed. Only very low levels of contamination were found and the trench was decontaminated (using power washer).

**Building 569**

Building 569 contains radioactivity assay equipment and temporary waste storage operations. Building 569 is also RCRA Unit 59. Containers of low-level, low-level mixed, transuranic and transuranic mixed waste are received from throughout the plant and assayed using a passive-active counter. Containers are assayed prior being accepted into Building 569. Containers whose contents meet the package criteria are transported to Buildings 664, 440, or 906 for storage pending off-site shipment. Those containers not meeting the package criteria, or which exhibit physical damage or improper packing are identified for repackaging. No unpacking or repackaging is performed in Building 569.

**Building 570**

Building 570 was built as the Building 569 air plenum, but has never been activated and has never housed any radiological or hazardous operation.

**Trailer T760A**

T760A was used as a shower trailer for workers at the 904 Pad and the pondcrete operation on the 750 Pad. The trailer had no radiological or hazardous operations. Routine radiological surveys show no evidence of contamination.

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**Building 790**

Building 790 was designed to perform radiometric calibrations. Specifically, it is used to expose thermoluminescent dosimeters (TLD) and calibrate site health physics instrumentation. The building consists of three irradiation cells (A, B, and C) an instrument calibration support area, a control room, and an office area. This facility uses and stores sealed sources and X-ray generating equipment.

Cell A is a hexagonal shaped two-story, low neutron-scatter-design silo that houses the Pneumatic Source Transfer System (PSTS) for neutron flux calibration of TLDs and radiation survey equipment. Cell B contains an X-ray generating system for the calibration of portable radiation measurement instruments and to irradiate TLDs. Cell C contains high-level gamma irradiators, which are used for gamma irradiation of TLDs and instruments. No hazardous chemicals are stored in Building 790, other than general cleaning supplies and small quantities (less than 1 pint) of alcohol and acetone to clean some instrument parts.

Sources stored in Building 790 include, but are not limited to Pu, Am, Sr-90, Cf, Cs, Co-60, Ba, and Pm.

**Building 906**

Building 906, also referred to as Central Waste Storage, is RCRA Unit 14 and was constructed in 1994 as a LLW storage facility. In 2000 it had its ventilation system, fire protection system, alarm system and lightning protection systems up-graded to comply with the TRU waste storage requirements. Building 906 is currently permitted to store LLW, TRU, Mixed Waste, and TSCA waste, but primarily stores TRU waste. Building 906 has had no spills and there is no evidence of any building contamination. Some areas of the Building 906 have elevated dose rates caused by the TRU waste stored in the building.

**Current Operational Status**

Building 556 is operational as the site's Alarm Maintenance Center and the Respirators Cleaning and Repair Facility. Building 566A (air plenum for Building 566) is not operational. Building 569 is the Crate Counting Facility and is operational. Building 570 (the air plenum for Building 569) is not operational. Trailer T760A is a shower trailer and is not operational. Building 790 is currently operational as the site's Radiation Calibration Laboratory. Building 906 is currently operational as a TRU waste storage area.

**Contaminants of Concern**

**Asbestos**

*Describe any potential, likely, or known sources of Asbestos:*

None of the buildings in this HSA have an asbestos posting. Building 569 is posted as being asbestos free. The posting references Document # JAF-010-90. The other facilities in this HSA have not had a comprehensive asbestos survey.

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**Beryllium (Be)**

*Describe any potential, likely, or known Be production or storage locations:*

None of the buildings addressed in this HSA are on the List of known Be Areas. Respirators, which have been released from Beryllium areas are cleaned and repaired in Building 566. There is no history of beryllium building contamination associated with this activity.

*Summarize any recent Be sampling results:*

Contact the IH group for any recent Be sample results.

**Lead**

*Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):*

Given the age of the facilities addressed in this HSA, lead in paint should not be a concern. Building 790 and 569 have some lead shielding in the assay equipment.

**RCRA/CERCLA Constituents**

*Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):*

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations. See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

*Describe any potential, likely, or known spill locations (and sources, if any):*

None.

*Describe methods in which spills were mitigated, if any:*

None.

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**PCBs**

*Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):*

Due to the age of the facilities addressed in this HSA, there should not be a concern with PCBs in paint. PCBs were not known to have been handled in any of these facilities.

*Describe any potential, likely, or known spill locations (and sources, if any):*

No PCB spills occurred in any of the facilities addressed in this HSA.

*Describe methods in which spills were mitigated, if any:*

No PCB spills occurred in any of the facilities addressed in this HSA.

**Radiological Contaminants**

*Describe any potential, likely, or known radiological production or storage locations:*

Some of the facilities addressed in this HSA have potentially internally contaminated equipment, but there is not a history of significant building contamination associated with the Building operations. See "Historical Operations" section above for a detailed description of the operations that occurred in each facility addressed in this HSA.

See the "Environmental Concerns" section below for IHSSs and PACs associated with this building. See the Building specific WSRIC for more detailed listing of the waste streams associated with each building addressed in this HSA.

*Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):*

None

*Describe methods in which spills were mitigated, If any:*

None.

*Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):*

The primary Isotope of concern includes, but is not limited to uranium and plutonium. Other than sealed sources, there were no known mixed fission products or pure beta emitters used in any of the facilities addressed in this HSA.

*Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):*

See section below for information on IHSSs PACs, and UBCs.

# D&D RISS Facility Characterization Historical Site Assessment Report July, 2002 Rev. 0

## Environmental Restoration Concerns

*Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):*

Building 566 and 556A are associated with or located near the following IHSSs, PACs, and UBCs;

- 1) PAC 700-150.2 "Radioactive site west of Building 771 and 776 ", Active.
- 2) PAC 700-1102 "776-4", This IHSS was proposed NFA in 1997 and again in 2001. This NFA has not been approved and is currently under negotiation.

Building 567 and 570 are associated with or located near the following IHSSs, PACs, and UBCs;

- 1) PAC 700-150.5 "Radioactive site west of Building 707 ", Proposed NFA in 1998.

Buildings 790, 906, and Trailer T760A are not associated with or located near any IHSSs, PACs, and UBCs;

## Additional Information

*Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):*

None

## References

*Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):*

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. The Building WSRIC for those Buildings with a WSRIC. In addition, a facility walkdowns and interviews were performed.

## Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
<b>Building 566</b>	8500	0	19800	3600	2100	TBD	N/A
<b>Building 566A</b>	2800	0	1150	900	0	TBD	N/A
<b>Building 569</b>	4000	0	1100	2000	1000	TBD	N/A
<b>Building 570</b>	3900	0	700	200	0	TBD	N/A
<b>Trailer T760A</b>	None	200	300	350	450	TBD	N/A
<b>Building 790</b>	24,000	0	1900	800	1200	TBD	N/A
<b>Building 906</b>	13,000	0	3000	3500	0	TBD	N/A

## Further Actions

*Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):*

Begin the RLC/PDS process.

**Note:**

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a “snapshot” in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.

**Prepared By:** Doug Bryant / /s/ / July 2002  
 Name Signature Date

# ATTACHMENT C

## Radiological Data Summaries and Survey Maps



**SURVEY UNIT 569-4-003**  
**RADIOLOGICAL DATA SUMMARY - PDS**

**Survey Unit Description: B569 (Interior)**

569-4-003  
PDS Data Summary

<u>Total Surface Activity Measurements</u>			<u>Removable Activity Measurements</u>		
	65	65		65	
	Number Required	Number Obtained		Number Required	Number Obtained
MIN	-15.3	dpm/100 cm <sup>2</sup>	MIN	-1.2	dpm/100 cm <sup>2</sup>
MAX	32.8	dpm/100 cm <sup>2</sup>	MAX	7.9	dpm/100 cm <sup>2</sup>
MEAN	6.9	dpm/100 cm <sup>2</sup>	MEAN	-0.2	dpm/100 cm <sup>2</sup>
STD DEV	12.7	dpm/100 cm <sup>2</sup>	STD DEV	1.6	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>	TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

**SURVEY UNIT 569-4-003  
TSA - DATA SUMMARY**

Manufacturer:	NE Tech	NE Tech	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3	4	5
Serial #:	1366	1681	1681	665	1681
Cal Due Date:	6/26/03	10/18/03	10/18/03	8/19/03	10/18/03
Analysis Date:	5/7/03	5/7/03	5/8/03	5/12/03	5/12/03
Alpha Eff. (c/d):	0.209	0.218	0.218	0.216	0.218
Alpha Bkgd (cpm)	1.3	1.3	4.0	0.7	2.7
Sample Time (min)	1.5	1.5	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5	1.5	1.5
MDC (dpm/100cm <sup>2</sup> )	48.0	48.0	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> )	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1,2</sup>
1	2	10.0	45.9	4.7	21.6	24.6
2	4	8.7	40.3	6.0	27.8	19.0
3	1	6.7	32.1	5.3	25.4	10.8
4	1	8.0	38.3	8.0	38.3	17.0
5	2	5.3	24.3	8.0	36.7	3.0
6	2	2.7	12.4	2.7	12.4	-8.9
7	4	5.3	24.5	6.7	31.0	3.2
8	4	6.0	27.8	4.7	21.8	6.5
9	1	6.7	32.1	4.7	22.5	10.8
10	1	5.3	25.4	6.0	28.7	4.1
11	1	6.0	28.7	4.0	19.1	7.4
12	2	2.7	12.4	3.3	15.1	-8.9
13	1	6.0	28.7	4.0	19.1	7.4
14	2	3.3	15.1	2.7	12.4	-6.2
15	2	8.0	36.7	6.0	27.5	15.4
16	2	5.3	24.3	1.3	6.0	3.0
17	1	10.0	47.8	2.0	9.6	26.6
18	1	9.3	44.5	5.3	25.4	23.2
19	2	2.0	9.2	0.7	3.2	-12.1
20	2	7.3	33.5	4.0	18.3	12.2
21	1	7.3	34.9	2.0	9.6	13.6
22	1	6.7	32.1	6.7	32.1	10.8
23	2	1.3	6.0	3.2	14.7	-15.3
24	1	9.3	44.5	4.7	22.5	23.2
25	2	4.7	21.6	1.3	6.0	0.3
26	1	2.7	12.9	4.7	22.5	-8.4
27	1	11.3	54.1	3.3	15.8	32.8
28	1	3.3	15.8	6.7	32.1	-5.5
29	1	11.3	54.1	6.7	32.1	32.8
30	1	8.0	38.3	7.3	34.9	17.0
31	2	6.0	27.5	8.0	36.7	6.2
32	5	11.3	51.8	8.0	36.7	30.5
33	2	4.0	18.3	1.3	6.0	-2.9
34	2	2.7	12.4	1.3	6.0	-8.9
35	2	5.3	24.3	2.0	9.2	3.0
36	2	2.7	12.4	3.3	15.1	-8.9
37	1	10.0	47.8	6.0	28.7	26.6
38	1	8.0	38.3	6.0	28.7	17.0
39	1	11.3	54.1	2.0	9.6	32.8
40	1	7.3	34.9	5.3	25.4	13.6
41	2	4.7	21.6	3.3	15.1	0.3
42	1	8.0	38.3	5.3	25.4	17.0
43	2	6.0	27.5	4.0	18.3	6.2
44	2	5.3	24.3	4.0	18.3	3.0

27

**SURVEY UNIT 569-4-003  
TSA - DATA SUMMARY**

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm2)	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm2)	Sample Net Activity (dpm/100cm2) <sup>1,2</sup>
45	2	6.0	27.5	2.7	12.4	6.2
46	1	4.0	19.1	7.3	34.9	-2.2
47	2	8.7	39.9	4.7	21.6	18.6
48	2	2.0	9.2	5.3	24.3	-12.1
49	1	10.7	51.2	5.3	25.4	29.9
50	2	7.3	33.5	3.3	15.1	12.2
51	1	8.7	41.6	6.7	32.1	20.3
52	2	4.7	21.6	5.3	24.3	0.3
53	2	2.0	9.2	4.0	18.3	-12.1
54	2	3.3	15.1	4.7	21.6	-6.2
55	1	4.7	22.5	4.7	22.5	1.2
56	2	2.7	12.4	2.7	12.4	-8.9
57	3	6.0	27.5	6.0	27.5	6.2
58	3	5.3	24.3	5.3	24.3	3.0
59	3	4.0	18.3	4.0	18.3	-2.9
60	3	5.3	24.3	5.3	24.3	3.0
61	3	4.0	18.3	4.0	18.3	-2.9
62	3	3.3	15.1	3.3	15.1	-6.2
63	4	6.0	27.8	6.0	27.8	6.5
64	4	4.0	18.5	4.0	18.5	-2.8
65	4	4.7	21.8	4.7	21.8	0.5

1 - Average LAB used to subtract from Gross Sample Activity

\* - The initial Sample Net Activity for location 32 was 246.9 dpm/100cm2.

This location was sealed and re-surveyed after a decay period. Re-survey results are reported.

No further investigation is required.

21.3	Sample LAB Average
MIN	-15.3
MAX	32.8
MEAN	6.9
SD	12.7
Transuranic DCGL <sub>W</sub>	100

**QC Measurements**

58 QC	5.0	4.0	18.3	2.7	12.4	-0.1
21 QC	4.0	4.7	21.8	6.0	27.8	3.3
1 QC	5.0	16.0	73.4	3.3	15.1	54.9
27 QC	4.0	8.0	37.0	4.0	18.5	18.6

1 - Average QC LAB used to subtract from Gross Sample Activity

18.5	QC LAB Average
MIN	-0.1
MAX	54.9
MEAN	19.2
Transuranic DCGL <sub>W</sub>	100

**SURVEY UNIT 569-4-003  
RSC - DATA SUMMARY**

<b>Manufacturer:</b>	Eberline	Eberline	Eberline
<b>Model:</b>	SAC-4	SAC-4	SAC-4
<b>Instrument ID#:</b>	6	7	8
<b>Serial #:</b>	1164	952	971
<b>Cal Due Date:</b>	6/17/03	7/9/03	8/6/03
<b>Analysis Date:</b>	5/12/03	5/12/03	5/12/03
<b>Alpha Eff. (c/d):</b>	0.33	0.33	0.33
<b>Alpha Bkgd (cpm)</b>	0.3	0.4	0.2
<b>Sample Time (min)</b>	2	2	2
<b>Bkgd Time (min)</b>	10	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	9.0	9.0	9.0

<b>Sample Location Number</b>	<b>Instrument ID#</b>	<b>Gross Counts (cpm)</b>	<b>Net Activity (dpm/100 cm<sup>2</sup>)</b>
1	7	6	7.9
2	8	1	0.9
3	9	0	-0.9
4	6	0	-0.9
5	7	0	-1.2
6	8	0	-0.6
7	9	0	-0.9
8	6	0	-0.9
9	7	0	-1.2
10	8	0	-0.6
11	9	0	-0.9
12	6	0	-0.9
13	7	5	6.4
14	8	0	-0.6
15	9	0	-0.9
16	6	0	-0.9
17	7	1	0.3
18	8	0	-0.6
19	9	0	-0.9
20	6	1	0.6
21	7	1	0.3
22	8	0	-0.6
23	9	1	0.6
24	6	0	-0.9
25	7	1	0.3
26	8	0	-0.6
27	9	0	-0.9
28	6	0	-0.9
29	7	0	-1.2
30	8	1	0.9
31	9	0	-0.9
32	6	0	-0.9
33	7	0	-1.2
34	8	0	-0.6
35	9	0	-0.9

29

**SURVEY UNIT 569-4-003  
RSC - DATA SUMMARY**

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm <sup>2</sup> )
36	6	1	0.6
37	7	1	0.3
38	8	0	-0.6
39	9	0	-0.9
40	6	0	-0.9
41	7	2	1.8
42	8	0	-0.6
43	9	0	-0.9
44	6	0	-0.9
45	7	0	-1.2
46	8	2	2.4
47	9	0	-0.9
48	6	1	0.6
49	7	0	-1.2
50	8	0	-0.6
51	9	0	-0.9
52	6	0	-0.9
53	7	3	3.3
54	8	0	-0.6
55	9	0	-0.9
56	6	0	-0.9
57	7	1	0.3
58	8	0	-0.6
59	9	0	-0.9
60	6	0	-0.9
61	7	1	0.3
62	8	0	-0.6
63	9	0	-0.9
64	6	0	-0.9
65	7	1	0.3
		MIN	-1.2
		MAX	7.9
		MEAN	-0.2
		SD	1.6
		Transuranic DCGL <sub>w</sub>	20

30

**PRE-DEMOLITION SURVEY FOR B569**

Survey Area: 4

Survey Unit: 569-4-003

Classification:

Building: 569

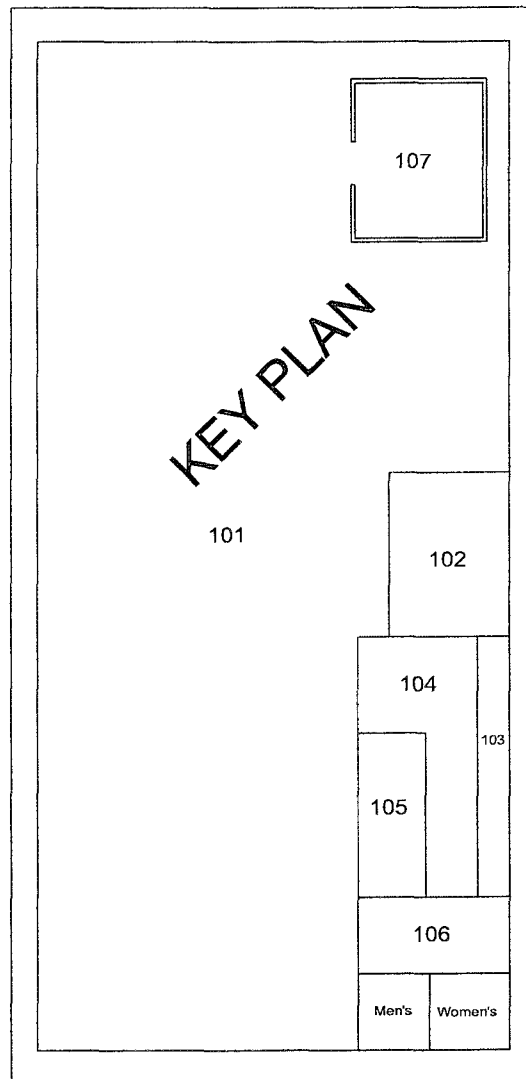
Survey Unit Description: 569 Interior

Total Area: 3,018 sq. m.

Total Floor Area: 987 sq. m.

PAGE 1 OF 1

**B569 Floorplan**



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		<p>0 METERS 10</p> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	<p>Prepared by: GIS Dept. 303-966-7707</p> <p><b>CH2MHILL</b> Communications Group</p> <p>MAP ID: 03-0189/B569-FP-SC</p>
			<p>Prepared for:</p> <p>May 15, 2003</p>

# PRE-DEMOLITION SURVEY FOR B569

Survey Area: 4

Survey Unit: 569-4-003

Classification: 3

Building: 569

Survey Unit Description: 569 Interior

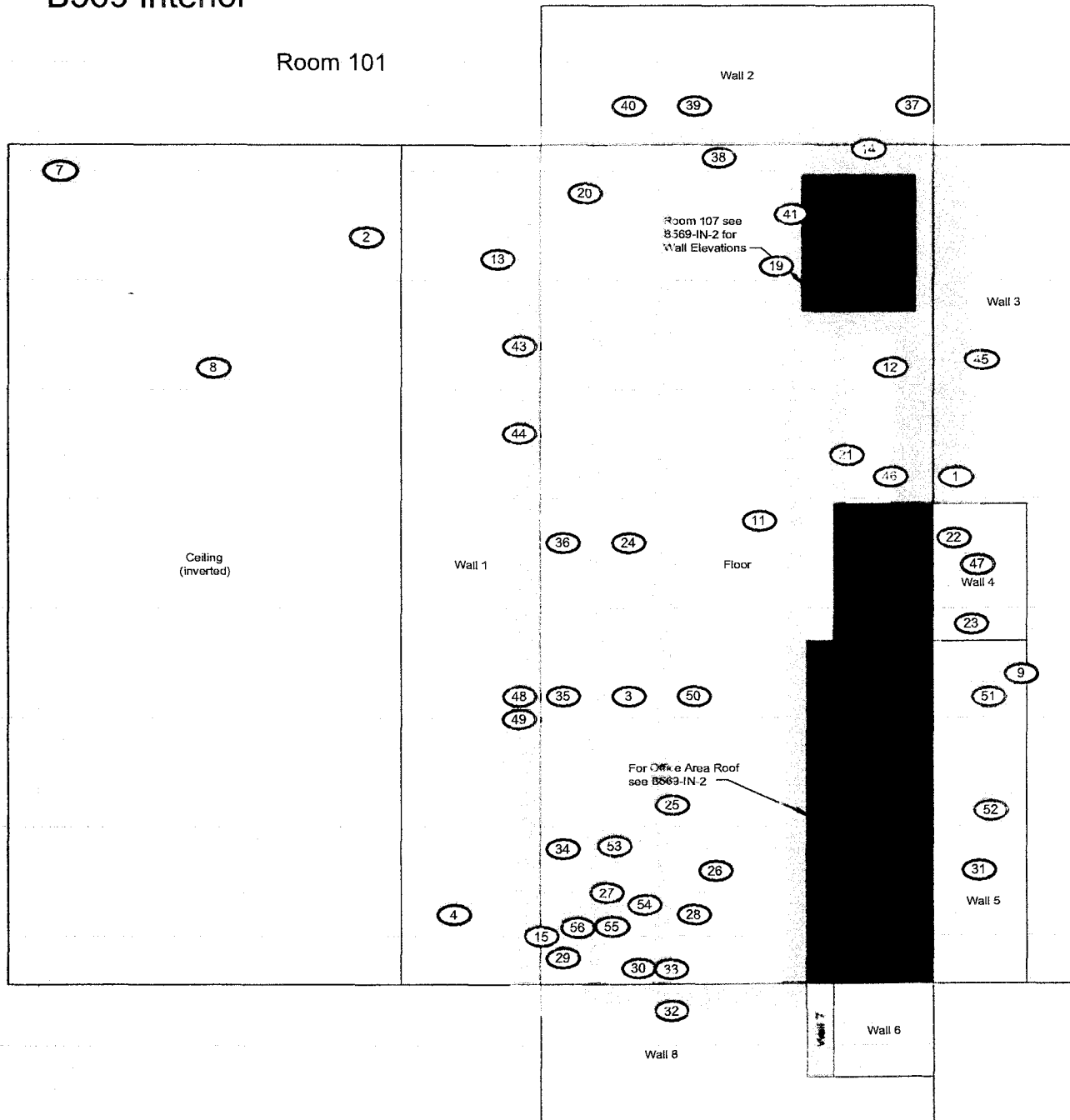
Total Area: 3,018 sq. m.

Total Floor Area: 687 sq. m.

PAGE 1 OF 2

## B569 Interior

### Room 101



Scan Area

<p><b>SURVEY MAP LEGEND</b></p> <ul style="list-style-type: none"> <li>Smear &amp; TSA Location</li> <li>Smear, TSA &amp; Sample Location</li> <li>Open/Inaccessible Area</li> <li>Area in Another Survey Unit</li> </ul>	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>	<p><b>N</b></p>	<p>0 30 FEET</p> <p>0 10 METERS</p> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	<p>U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707 Prepared for:</p> <p>CH2M HILL Communications Group</p> <p>Kaiser Hill</p> <p>MAP ID: 03-0189/B569-IN1-SC May 15, 2003</p>
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32



# PRE-DEMOLITION SURVEY FOR B569

Survey Area: 4

Survey Unit: 569-4-003

Classification: 3

Building: 569

Survey Unit Description: 569 Interior

Total Area: 3,018sq. m.

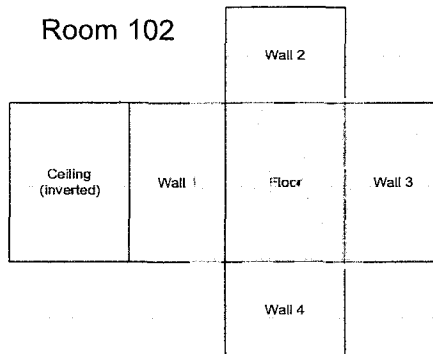
Total Floor Area: 687 sq. m.

PAGE 2 OF 2

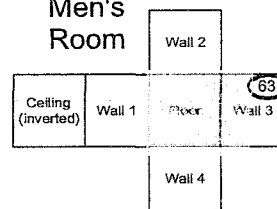
## B569 Interior

Offices Area Roof  
(see B569-IN-1)

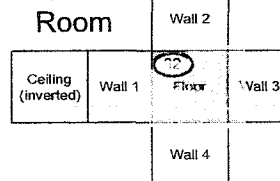
Room 102



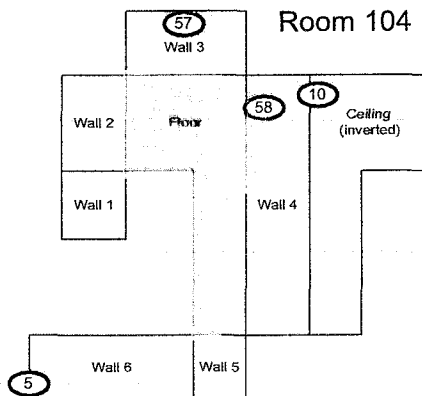
Men's Room



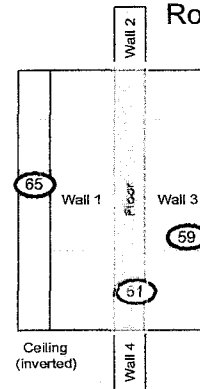
Women's Room



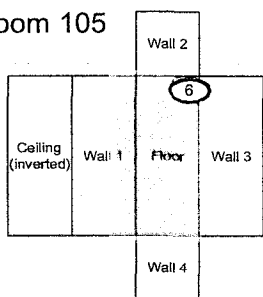
Room 104



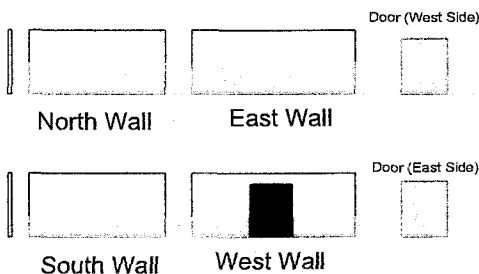
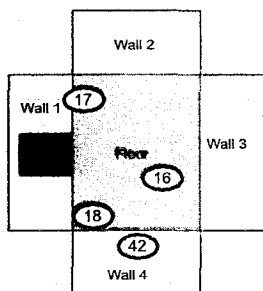
Room 103



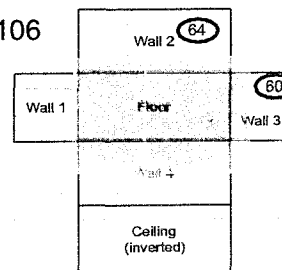
Room 105



Room 107



Room 106



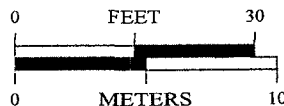
Scan Area

### SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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N



1 inch = 24 feet 1 grid sq. = 1 sq. m.

### Scan Survey Information

Survey Instrument ID #(s) & RCT ID #(s):  
1, 2, 3, 4

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2M HILL  
Communications Group



MAP ID: 03-0189/B569-IN2-SC

May 15, 2003

**SURVEY UNIT 570-4-004**  
**RADIOLOGICAL DATA SUMMARY - PDS**

**Survey Unit Description: B570 (Interior)**

570-4-004  
PDS Data Summary

Total Surface Activity Measurements

	25	25
	Number Required	Number Obtained
MIN	-1.5	dpm/100 cm <sup>2</sup>
MAX	56.9	dpm/100 cm <sup>2</sup>
MEAN	20.9	dpm/100 cm <sup>2</sup>
STD DEV	15.2	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	100	dpm/100 cm <sup>2</sup>

Removable Activity Measurements

	25	25
	Number Required	Number Obtained
MIN	-1.2	dpm/100 cm <sup>2</sup>
MAX	2.1	dpm/100 cm <sup>2</sup>
MEAN	-0.3	dpm/100 cm <sup>2</sup>
STD DEV	1.0	dpm/100 cm <sup>2</sup>
TRANSURANIC DCGL <sub>w</sub>	20	dpm/100 cm <sup>2</sup>

**SURVEY UNIT 570-4-004  
TSA - DATA SUMMARY**

Manufacturer:	NE Tech	NE Tech	NE Tech
Model:	DP-6	DP-6	DP-6
Instrument ID#:	1	2	3
Serial #:	1366	1681	3115
Cal Due Date:	6/26/03	10/18/03	9/24/03
Analysis Date:	5/7/03	5/7/03	5/7/03
Alpha Eff. (c/d):	0.209	0.218	0.218
Alpha Bkgd (cpm)	1.3	1.3	2.7
Sample Time (min)	1.5	1.5	1.5
LAB Time (min)	1.5	1.5	1.5
MDC (dpm/100cm <sup>2</sup> )	48.0	48.0	48.0

Sample Location Number	Instrument ID#:	Sample Gross Counts (cpm)	Sample Gross Activity (dpm/100cm <sup>2</sup> )	LAB Gross Counts (cpm)	LAB Gross Activity (dpm/100cm <sup>2</sup> ) <sup>1,2</sup>	Sample Net Activity (dpm/100cm <sup>2</sup> ) <sup>1,2</sup>
1	1	8.0	38.3	8.0	38.3	15.3
2	1	13.3	63.6	6.7	32.1	40.6
3	2	13.3	61.0	0.0	0.0	38.0
4	2	11.3	51.8	4.7	21.6	28.8
5	1	5.3	25.4	8.0	38.3	2.3
6	1	6.0	28.7	6.7	32.1	5.7
7	2	9.3	42.7	4.0	18.3	19.6
8	1	7.3	34.9	6.7	32.1	11.9
9	1	11.3	54.1	4.0	19.1	31.0
10	2	12.7	58.3	2.3	10.6	35.2
11	2	12.0	55.0	2.7	12.4	32.0
12	1	9.3	44.5	8.0	38.3	21.5
13	1	7.3	34.9	5.3	25.4	11.9
14	2	4.7	21.6	4.7	21.6	-1.5
15	1	16.7	79.9	8.0	38.3	56.9
16	2	10.0	45.9	3.3	15.1	22.9
17	2	10.7	49.1	4.7	21.6	26.1
18	2	6.0	27.5	4.7	21.6	4.5
19	2	13.3	61.0	1.3	6.0	38.0
20	2	10.7	49.1	6.3	28.9	26.1
21	2	6.7	30.7	2.7	12.4	7.7
22	2	6.7	30.7	8.0	36.7	7.7
23	3	12.7	58.3	5.3	24.3	35.2
24	2	6.0	27.5	2.7	12.4	4.5
25	2	5.3	24.3	4.0	18.3	1.3

<sup>1</sup> - Average LAB used to subtract from Gross Sample Activity

23.0	Sample LAB Average
MIN	-1.5
MAX	56.9
MEAN	20.9
SD	15.2
Transuranic DCGL <sub>W</sub>	100

**QC Measurements**

16 QC	3.0	5.3	24.3	12.0	55.0	-26.1
24 QC	3.0	7.3	33.5	10.0	45.9	-17.0

<sup>1</sup> - Average QC LAB used to subtract from Gross Sample Activity

50.5	QC LAB Average
MIN	-26.1
MAX	-17.0
MEAN	-21.6
Transuranic DCGL <sub>W</sub>	100

**SURVEY UNIT 570-4-004  
RSC - DATA SUMMARY**

<b>Manufacturer:</b>	Eberline	Eberline	Eberline
<b>Model:</b>	SAC-4	SAC-4	SAC-4
<b>Instrument ID#:</b>	4	5	6
<b>Serial #:</b>	1164	952	971
<b>Cal Due Date:</b>	6/17/03	7/9/03	8/6/03
<b>Analysis Date:</b>	5/12/03	5/12/03	5/12/03
<b>Alpha Eff. (c/d):</b>	0.33	0.33	0.33
<b>Alpha Bkgd (cpm)</b>	0.3	0.4	0.2
<b>Sample Time (min)</b>	2	2	2
<b>Bkgd Time (min)</b>	10	10	10
<b>MDC (dpm/100cm<sup>2</sup>)</b>	9.0	9.0	9.0

Sample Location Number	Instrument ID#	Gross Counts (cpm)	Net Activity (dpm/100 cm <sup>2</sup> )
1	4	0	-0.9
2	5	0	-1.2
3	6	0	-0.6
4	7	0	-0.9
5	4	0	-0.9
6	5	1	0.3
7	6	0	-0.6
8	7	0	-0.9
9	4	1	0.6
10	5	1	0.3
11	6	0	-0.6
12	7	0	-0.9
13	4	0	-0.9
14	5	1	0.3
15	6	0	-0.6
16	7	0	-0.9
17	4	2	2.1
18	5	0	-1.2
19	6	0	-0.6
20	7	0	-0.9
21	4	0	-0.9
22	5	2	1.8
23	6	0	-0.6
24	7	0	-0.9
25	4	2	2.1
		MIN	-1.2
		MAX	2.1
		MEAN	-0.3
		SD	1.0
		Transuranic DCGL <sub>w</sub>	20

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# PRE-DEMOLITION SURVEY FOR B570

Survey Area: 4

Survey Unit: 570-4-004

Classification: 3

Building: 570

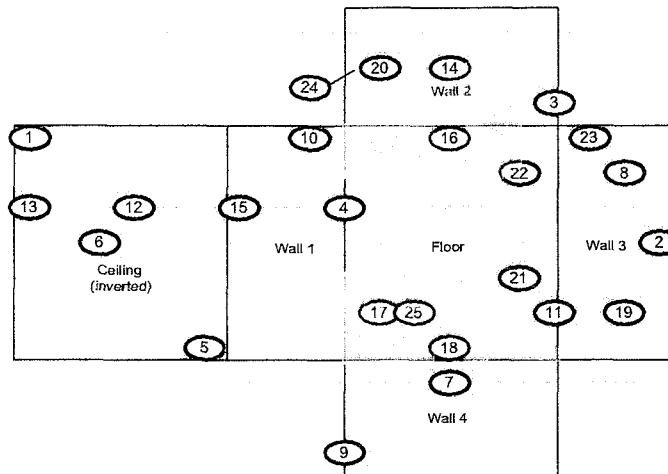
Survey Unit Description: 570 Interior

Total Area: 168 sq. m.

Total Floor Area: 41 sq. m.

PAGE 1 OF 1

## B570 Interior



Scan Area

<b>SURVEY MAP LEGEND</b> (M) Smear & TSA Location (M) Smear, TSA & Sample Location ■ Open/Inaccessible Area □ Area in Another Survey Unit	Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.	N 	0 FEET 25 0 METERS 8 1 inch = 18 feet 1 grid sq. = 1 sq. m.	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by: GIS Dept. 303-966-7707 Prepared for:  Communications Group MAP ID: 03-0189/B570-IN-SC May 14, 2003
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## ATTACHMENT D

### Chemical Data Summaries and Sample Maps

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### Asbestos Data Summary

Sample Number	Map Survey Location	Room	Material Sampled and Location	Analytical Results
<b>Building 569</b>				
569-05122003-315-201	1	106	12" white vinyl floor tile with yellow mastic adhesive	None Detected
569-05122003-315-202	2	106	12" white vinyl floor tile with yellow mastic adhesive	None Detected
569-05122003-315-203	3	107	White paint on CMU, exterior wall	None Detected
569-05122003-315-204	4	107	White paint on CMU, exterior wall	None Detected
569-05122003-315-205	5	107	White paint on CMU, interior wall	None Detected
569-05122003-315-206	6	101	Drywall and joint compound	None Detected
569-05122003-315-207	7	101	White seam tape on HVAC metal ductwork	None Detected



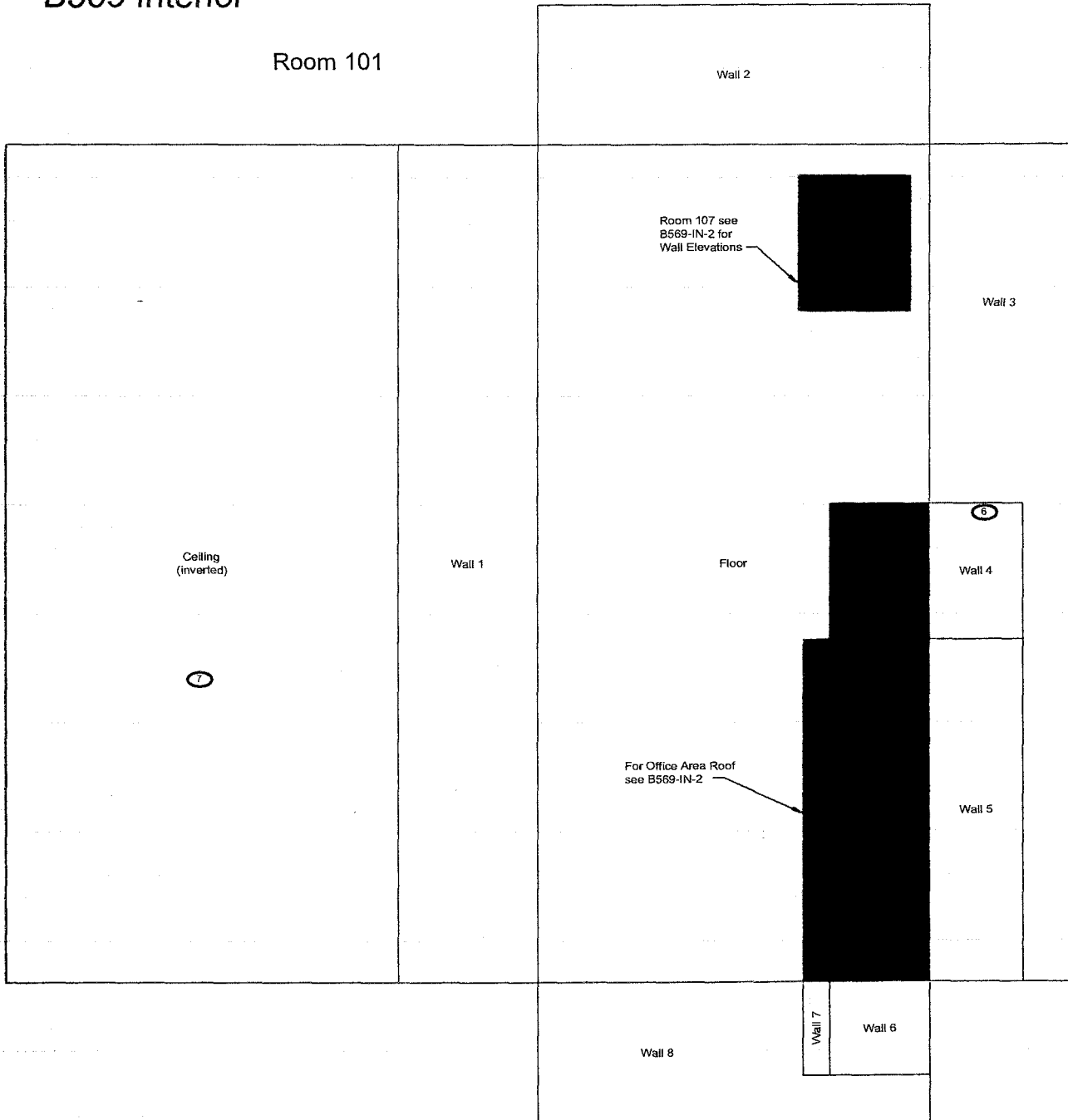
# CHEMICAL SAMPLE MAP

Building 569 Room 101  
Asbestos

PAGE 1 OF 2

B569 Interior

Room 101

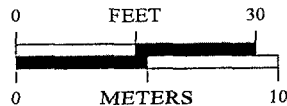


## SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location

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- Open/Inaccessible Area
- Area in Another Survey Unit



1 inch = 24 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL  
Communications Group



MAP ID: 03-0189/B569-IN1-ASB

May 14, 2003

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# CHEMICAL SAMPLE MAP

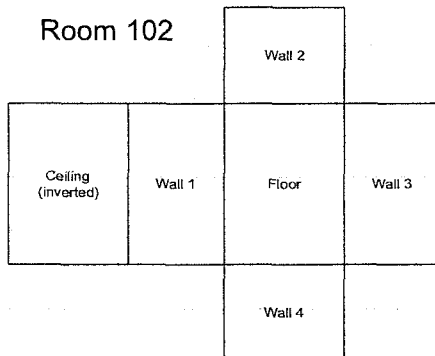
Building 569 Interior  
Asbestos

PAGE 2 OF 2

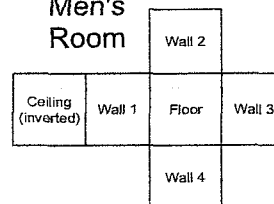
## B569 Interior

Offices Area Roof  
(see B569-IN-1)

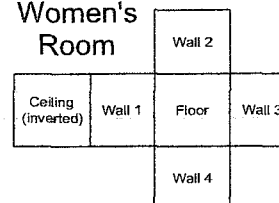
Room 102



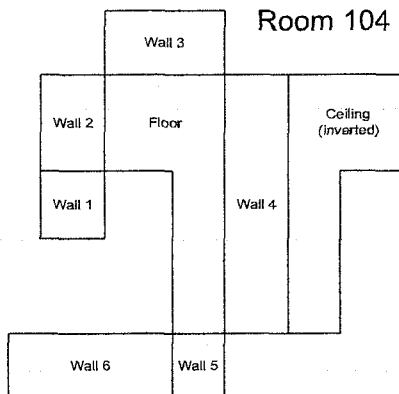
Men's Room



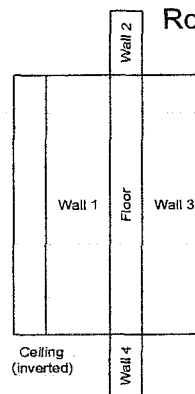
Women's Room



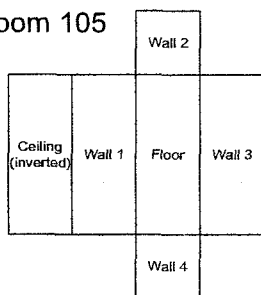
Room 104



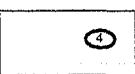
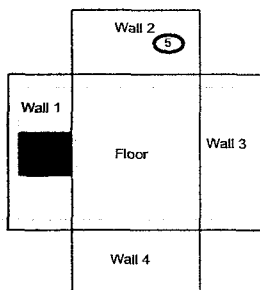
Room 103



Room 105



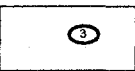
Room 107



North Wall



East Wall



South Wall

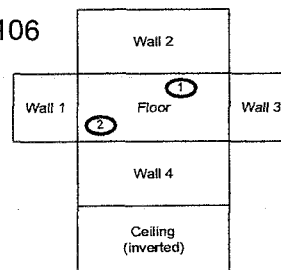


West Wall

Door (West Side)

Door (East Side)

Room 106



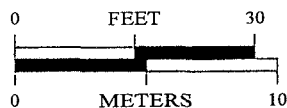
### SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location

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Open/Inaccessible Area

Area in Another Survey Unit



1 inch = 24 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

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Communications Group



MAP ID: 03-0189/B569-IN2-ASB

May 14, 2003

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## Beryllium Data Summary

Sample Number	Map Survey Point Location	Room	Sample Location	Result ( $\mu\text{g}/100 \text{ cm}^2$ )
<b>Building 569</b>				
569-05062003-315-101	1	101	Top of ELP1B-1 electrical panel, north wall	< 0.1
569-05062003-315-102	2	101	Louvers on HVAC duct, west wall	< 0.1
569-05062003-315-103	3	101	On I-beam brace at floor, west wall	< 0.1
569-05062003-315-104	4	101	On counter-balance weights to Crate Counter II	< 0.1
569-05062003-315-105	5	101	On Quincy air compressor	< 0.1
569-05062003-315-106	6	101	On XFMR TIB-1 electrical box, south wall	< 0.1
569-05062003-315-107	7	101	On platform for X-ray chamber	< 0.1
569-05062003-315-108	8	105	On 12" vinyl floor tile at west wall	< 0.1
569-05062003-315-109	9	104	Top of 428569006 emergency flight, east wall	< 0.1
569-05062003-315-110	10	106	Top of stainless steel shelf, NW corner	< 0.1
<b>Building 570</b>				
570-05062003-315-101	1	Main	Top of metal ductwork to Plenum	< 0.1
570-05062003-315-102	2	Main	Top of J-570-1 electrical panel, south wall	< 0.1
570-05062003-315-103	3	Main	On concrete floor	< 0.1
570-05062003-315-104	4	Main	On angle iron brace, east wall	< 0.1
570-05062003-315-105	5	Main	On red Fire Alarm box, north wall	< 0.1

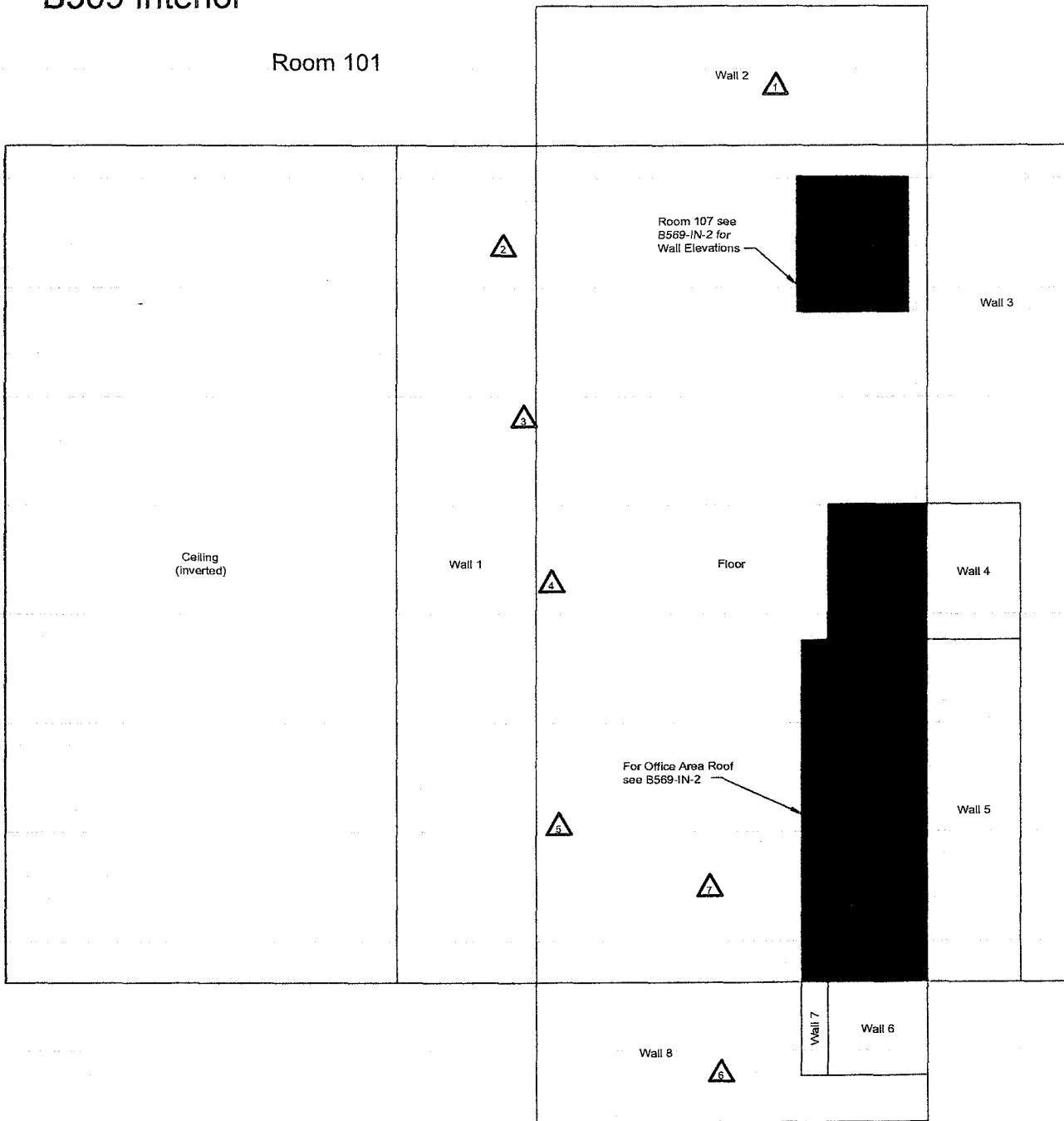
# CHEMICAL SAMPLE MAP

Building 569 Room 101  
Beryllium

PAGE 1 OF 2

B569 Interior

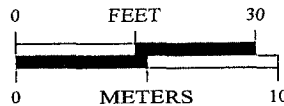
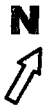
Room 101



## SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location

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1 inch = 24 feet 1 grid sq. = 1 sq. m.

- Open/Inaccessible Area
- Area in Another Survey Unit

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL  
Communications Group



MAP ID: 03-0189/B569-IN1-BE

May 14, 2003

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# CHEMICAL SAMPLE MAP

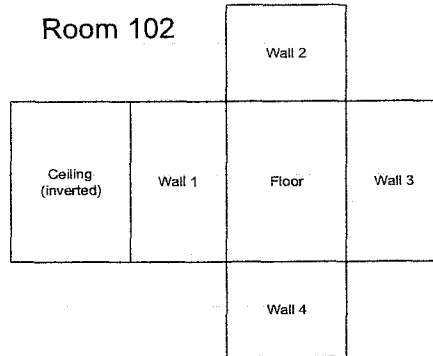
Building 569 Interior  
Beryllium

PAGE 2 OF 2

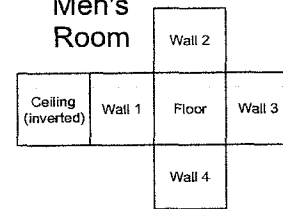
## B569 Interior

Offices Area Roof  
(see B569-IN-1)

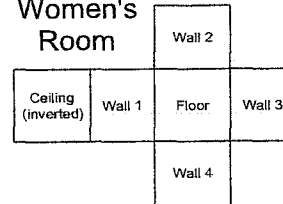
Room 102



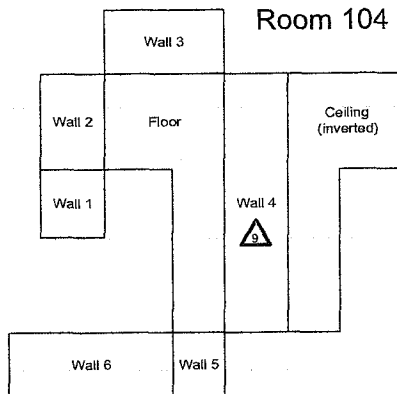
Men's Room



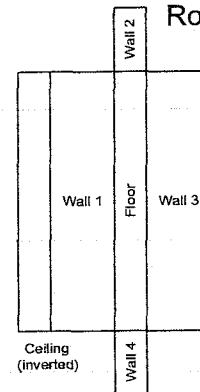
Women's Room



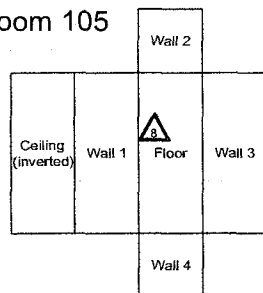
Room 104



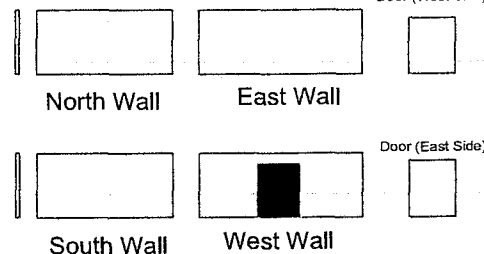
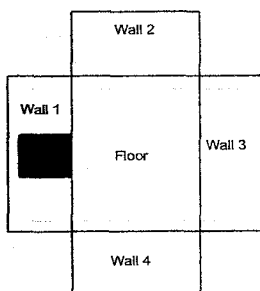
Room 103



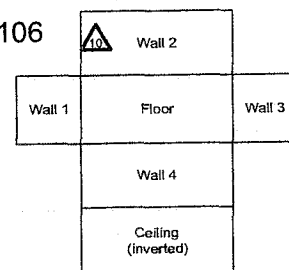
Room 105



Room 107



Room 106

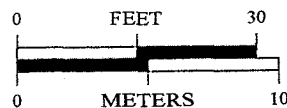


### SURVEY MAP LEGEND

- ⊙ Asbestos Sample Location
- △ Beryllium Sample Location
- ⊞ Lead Sample Location
- ⬠ RCRA/CERCLA Sample Location
- ⊙ PCB Sample Location

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- Open/Inaccessible Area
- Area in Another Survey Unit



1 inch = 24 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

CH2MHILL  
Communications Group



MAP ID: 03-0189/B569-IN2-BE

May 14, 2003

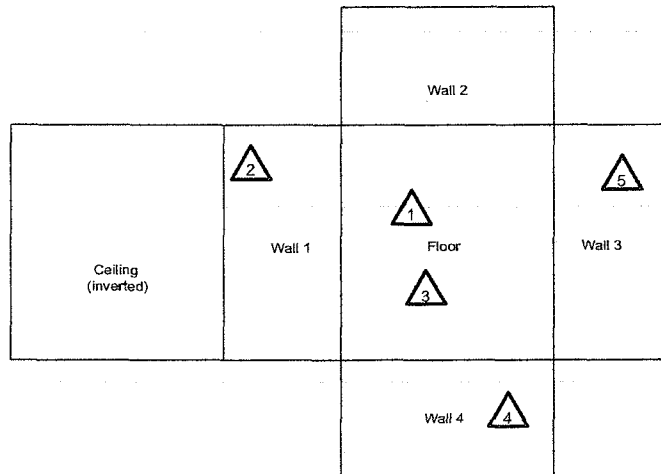
45

# CHEMICAL SAMPLE MAP

## Building 570 Interior Beryllium

PAGE 1 OF 1

### B570 Interior



SURVEY MAP LEGEND		U.S. Department of Energy Rocky Flats Environmental Technology Site	
Asbestos Sample Location	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&amp;ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>		 1 inch = 18 feet 1 grid sq. = 1 sq. m.
Beryllium Sample Location			
Lead Sample Location			
RCRA/CERCLA Sample Location			
PCB Sample Location	Open/Inaccessible Area	Area in Another Survey Unit	 Communications Group
		 Prepared by: GIS Dept. 303-966-7707 Prepared for: MAP ID: 03-0189/B570-IN-BE May 14, 2003	

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# ATTACHMENT E

## Data Quality Assessment (DQA) Detail

## DATA QUALITY ASSESSMENT (DQA)

### VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically asbestos and beryllium).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, asbestos in E-2, and beryllium in E-3. A data completeness summary for all results is given in Table E-4.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project Files. This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Beta/gamma survey designs were not implemented for Buildings 569 and 570 based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic DCGL<sub>w</sub> (100 dpm/100cm<sup>2</sup>) and the Uranium DCGL<sub>w</sub> (5,000 dpm/100cm<sup>2</sup>) unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design (for those survey units performed per PDS requirements) was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

### SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable certainties.

All beryllium results were less than associated action levels (0.1 µg/100cm<sup>2</sup>) also confirming a Type 1 facility classification.

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Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable unrestricted release levels. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits. All radiological results meet the PDS unrestricted release criteria.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facility. On this basis, Buildings 569 and 570 meets the unrestricted release criteria with the confidences stated herein.

**Table E-1 V&V of Radiological Surveys – Buildings 569 and 570**

V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		COMMENTS
QUALITY REQUIREMENTS		Parameters	Measure frequency	
ACCURACY	initial calibrations		90% < x < 110%	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	daily source checks		80% < x < 120%	Performed daily/within range.
	local area background: Field		typically < 10 dpm	All local area backgrounds were within expected ranges (i.e., no elevated anomalies.)
PRECISION	field duplicate measurements for TSA		≥ 5% of real survey points	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 569-4-003 and 570-4-004 (interior) and EXT-B-001 (exterior).		statistical and biased	Random w/ statistical confidence.
	Survey Maps		NA	Random and biased measurement locations controlled/mapped to ± 1 m.
COMPARABILITY	Controlling Documents (Characterization Pkg; RSPs)		qualitative	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
	units of measure		dpm/100cm <sup>2</sup>	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys usable results vs. unusable		>95%	See Table E-4 for details.
SENSITIVITY	detection limits		>95%	
			TSA: ≤ 50 dpm/100cm <sup>2</sup> RA: ≤ 10 dpm/100cm <sup>2</sup>	MDAs ≤ 50% DCGL <sub>w</sub> per MARSSIM guidelines.

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**Table E-3 V&V of Beryllium Results – Buildings 569 and 570**

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		COMMENTS
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB ---->	Reservoirs Environmental Inc.	
QUALITY REQUIREMENTS		RIN ---->	RIN03D0855	No qualifications significant enough to change project decisions i.e., classification of Type 1 facilities is confirmed. All results were below associated action levels.
ACCURACY	Calibrations	Measure	Frequency	
	Initial	Linear	≥ 1	
	Continuing	calibration	≥ 1	
		80% < %R < 120 %		
	LCS/MS	80% < %R < 120 %	≥ 1	
PRECISION	Blanks - lab & field	< MDL	≥ 1	
	interference check std (ICP)	NA	NA	
	LCSD	80% < %R < 120 %	≥ 1	
	field duplicate	(RPD < 20%)		
		all results < RL	≥ 1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	measurement units	ug/100cm <sup>2</sup>	NA	
COMPLETENESS	Plan vs. Actual samples	> 95%	NA	
	usable results vs. unusable	> 95%	NA	
SENSITIVITY	detection limits	MDL of 0.012 ug/100cm <sup>2</sup>	all measures	

**Table E-4 Data Completeness Summary – Buildings 569 and 570**

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	Building 569 (interior)	6 biased	7 biased	No ACM present, all results < 1% by volume	40 CFR 763.86; 5 CCR 1001-10; EPA 600/R-93/116 RIN03Z1659
Beryllium	Building 569 (interior)	10 biased	10 biased	No beryllium contamination found, all results less than associated action levels	OSHA ID-125G RIN03D0855 Building 569 sample numbers are 569-05062003-315-101 through 569-05062003-315-110. No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> ).
Beryllium	Building 570 (interior)	5 biased	5 biased	No beryllium contamination found, all results less than associated action levels	OSHA ID-125G RIN03D0855 Building 570 sample numbers are 570-05062003-315-101 through 570-05062003-315-105. No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1 ug/100cm <sup>2</sup> ).

**Table E-4 Data Completeness Summary – Buildings 569 and 570**

ANALYTE	Building/Area /Unit	Sample Number Planned (Real & QC)	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 4 Survey Unit: 569-4-003 Building 569 (interior)	35 $\alpha$ TSA (15 random/20 biased) and 35 $\alpha$ Smears (15 random/20 biased)	35 $\alpha$ TSA (15 random/20 biased) and 35 $\alpha$ Smears (15 random/20 biased)	No elevated contamination found at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.  Initial sample net activity at location 32 (246.9 dpm/100cm <sup>2</sup> ) was greater than the Transuranic DCGL <sub>w</sub> (100 dpm/100cm <sup>2</sup> ). The area was allowed to decay and re-surveyed. The re-survey result (30.5 dpm/100cm <sup>2</sup> ) was less than the Transuranic DCGL and is the value reported in the PDS Data Summary. On this basis, no further investigation is required; all results are less than the unrestricted release limits.
Radiological	Survey Area 4 Survey Unit: 570-4-004 Building 570 (interior)	20 $\alpha$ TSA (15 random/5 biased) and 20 $\alpha$ Smears (15 random/5 biased)	20 $\alpha$ TSA (15 random/5 biased) and 20 $\alpha$ Smears (15 random/5 biased)	No elevated contamination found at any location; all values below PDS unrestricted release levels	Transuranic and/or Uranium DCGLs as applicable.